

William Stone
Packaging Corporation of America
408 East St. Clair Street
Vincennes, IN 47591

Re: Registered Operation Status,
083-12749-00040

Dear William Stone:

The application from Packaging Corporation of America, received on October 24, 2000, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following corrugated box manufacturing operation, to be located at 408 E. St. Clair Street, Vincennes, Indiana, is classified as registered:

- (a) Two (2) natural gas fired boilers, designated as BL1 and BL2, with a maximum heat input capacity of 13.2 mmBtu/hr each and exhausts to a stack designated as 001.
- (b) One (1) starch storage silo, with a maximum storage capacity of 110,000 pounds, a maximum starch throughput of equipped with a bin vent filtration system to aid in the reduction of starch lost from the pneumatic loading process, and exhausts to a stack designated as 003.
- (c) Five (5) flexographic printing presses, with a total maximum ink usage rate of 17.11 pounds per hour, a total maximum corrugated sheet rate of 18,000 pounds per hour, exhausts through the general ventilation system designated as 002 and maintains the following:
 - 1. One (1) flexographic press, designated as #1, with a maximum line speed of 990 ft/min and a maximum printing width of 122 inches.
 - 2. One (1) flexographic press, designated as #2, with a maximum line speed of 1050 ft/min and a maximum printing width of 96 inches.
 - 3. One (1) flexographic press, designated as #3, with a maximum line speed of 700 ft/min and a maximum printing width of 80 inches.
 - 4. One (1) flexographic press, designated as #4, with a maximum line speed of 640 ft/min and a maximum printing width of 78 inches.
 - 5. One (1) flexographic press, designated as #5, with a maximum line speed of 550 ft/min and a maximum printing width of 146 inches.
- (d) One (1) adhesive/glue application area, with a maximum adhesive/glue usage rate of 18.3 pounds per hour, a maximum printed corrugated sheet rate of 17,100 pounds per hour and exhausts through the general ventilation system designated as 002.
- (e) One (1) wax application area, with a maximum wax usage rate of 20,000 gallons per year, a maximum corrugated sheet rate of 1,800 pounds per hour and exhausts through the general ventilation system designated as 002.

- (f) One (1) scrap collection system, with a maximum paper rate of 2,400 pounds per hour, exhausts to a stack designated as 004 and consists of the following:
 - (1) One (1) paper separation cyclone, which collects the scrap and conveys the paper to the baler, an air flow rate of 60,000 cfm and an overall efficiency of 99.9%; and
 - (2) One (1) baler.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:
 - (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
2. Pursuant to 326 IAC 6-2-4, the particulate matter (PM) emissions from the two (2) boilers of 13.2 million Btu per hour each capacity, shall not exceed 0.56 pounds per million Btu for each boiler, as determined by the following equation:

$$Pt = 1.09/Q^{0.26}$$

Where; Pt = Pounds of Particulate Matter emitted per million Btu (lb/mmBtu) heat input.
Q = Total source maximum operating capacity rating in million Btu per hour (mmBtu/hr) heat input.

3. Pursuant to 326 IAC 6-3 (Process Operations), the following shall be applicable to the scrap paper circulation system and the starch silo loading/unloading area:
 - (a) The cyclone shall be in operation at all times when the scrap paper circulation system (including the baler) is in operation.
 - (b) The filters used to prevent starch product loss, shall be in operation at all times when the silo is being loaded and unloaded.
 - (c) The PM emission from starch silo loading/unloading area and the scrap collection system shall not exceed 1.39 pounds per hour and 4.63 pounds per hour respectively as calculated using the following equation:

$$E = 4.10P^{0.67}$$

where: E = rate of emission in pounds per hour,
P = process weight in tons per hour.

- (d) An inspection shall be performed each calendar quarter of all the filters. Defective filters shall be replaced. A record shall be kept of the results of the inspection and the number of filters replaced.
- (e) In the event that a filter's failure has been observed:
 - (i) The affected compartments will be shut down immediately until the failed units have been replaced.

- (ii) Based upon the findings of the inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion
 - (f) That visible emission notations of all exhaust to the atmosphere from the cyclone and filters shall be performed once per working shift. A trained employee will record whether emissions are normal or abnormal.
 - (g) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, 80% of the time, the process is in operation, not counting start up or shut down time.
 - (h) In the case of batch or discontinuous operation, readings shall be taken during that part of the operation specified in the facility's specific condition prescribing visible emissions.
 - (i) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal and abnormal visible emissions for that specific process.
 - (j) The Preventive Maintenance Plan for this facility shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.
4. 40 CFR Part 60 Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) is applicable to the two(2) natural gas fired boilers. Pursuant to 40 CFR 60 Subpart Dc, Part 60.48c, the following reporting and record keeping is required:
- (a) The owner/operator of each affected facility shall submit notification of the date of construction or reconstruction, postmarked no later than 30 days after such date, date of anticipated startup, postmarked not more than 60 days nor less than 30 days prior to such date, and date of actual startup, postmarked within 15 days after such date of actual startup.
 - (b) This notification shall include:
 - 1. The design heat input capacity of the affected facility and identification of fuels to be combusted;
 - 2. The annual capacity factor at which the owner/operator anticipates operating the affected facility based on the fuels fired;
 - 3. The owner/operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each month; and
 - 4. All records required under this section shall be maintained by the owner/operator of the affected facility for a period of two years following the date of such record.
5. The five flexographic presses designated as #1, #2, #3, #4 and #5 are subject to the National Emission Standards for Hazardous Air Pollutants (NESHAPs), 326 IAC 14, (40 CFR 63, Subpart KK, and 326 IAC 20-1-1) as area sources as specified in 63.820 (a)(3). Pursuant to 40 CFR 63, Subpart KK, and 326 IAC 20-1-1, the operation of these presses are subject to the following conditions:
- (1) 40 CFR 63.829 (d) - The owner and operator of each facility which commits to the criteria of 63.820 (a)(2) shall maintain records of all required measurements and calculations needed to demonstrate compliance with these criteria, including the mass of all HAP containing materials used and the mass fraction of HAP present in each HAP containing material used, on a monthly basis.
 - (2) 40 CFR 63.830 (b)(1) - An initial notification required in 40 CFR 63.9 (b).

This registration is revised registration issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Management that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

**Compliance Data Section
Office of Air Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Management (OAM) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

GS

cc: File – Knox County
Knox County Health Department
Air Compliance – Gene Kelso
Permit Tracking - Janet Mobley
Technical Support and Modeling - Michele Boner
Compliance Data Section - Karen Nowak

Registration Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3)

Company Name:	Packaging Corporation of America
Address:	408 East St. Clair Street
City:	Vincennes, IN 47591
Authorized individual:	William Stone
Phone #:	812-882-7600
Registration #:	R083-12749-00040

I hereby certify that Packaging Corporation of America is still in operation and is in compliance with the requirements of Registration 083-12749-00040.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for a Revised Registration

Source Background and Description

Source Name:	Packaging Corporation of America.
Source Location:	408 E. Clair Street, Vincennes, Indiana 47591
County:	Knox
Construction Permit No.:	083-12749-00040
SIC Code:	2653
Permit Reviewer:	Gurinder Saini

The Office of Air Management (OAM) has reviewed an application from Packaging Corporation of America relating to the construction and operation of a corrugated box manufacturing plant.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

- (a) Two (2) natural gas fired boilers, designated as BL1 and BL2, with a maximum heat input capacity of 13.2 mmBtu/hr each and exhausts to a stack designated as 001.
- (b) One (1) starch storage silo, with a maximum storage capacity of 110,000 pounds, a maximum starch throughput of equipped with a bin vent filtration system to aid in the reduction of starch lost from the pneumatic loading process, and exhausts to a stack designated as 003.
- (c) Five (5) flexographic printing presses, with a total maximum ink usage rate of 17.11 pounds per hour, a total maximum corrugated sheet rate of 18,000 pounds per hour, exhausts through the general ventilation system designated as 002 and maintains the following:
 - 1. One (1) flexographic press, designated as #1, with a maximum line speed of 990 ft/min and a maximum printing width of 122 inches.
 - 2. One (1) flexographic press, designated as #2, with a maximum line speed of 1050 ft/min and a maximum printing width of 96 inches.
 - 3. One (1) flexographic press, designated as #3, with a maximum line speed of 700 ft/min and a maximum printing width of 80 inches.
 - 4. One (1) flexographic press, designated as #4, with a maximum line speed of 640 ft/min and a maximum printing width of 78 inches.
 - 5. One (1) flexographic press, designated as #5, with a maximum line speed of 550 ft/min and a maximum printing width of 146 inches.
- (d) One (1) adhesive/glue application area, with a maximum adhesive/glue usage rate of 18.3 pounds per hour, a maximum printed corrugated sheet rate of 17,100 pounds per hour and exhausts through the general ventilation system designated as 002.
- (e) One (1) wax application area, with a maximum wax usage rate of 20,000 gallons per year,

a maximum corrugated sheet rate of 1,800 pounds per hour and exhausts through the general ventilation system designated as 002.

- (f) One (1) scrap collection system, with a maximum paper rate of 2,400 pounds per hour, exhausts to a stack designated as 004 and consists of the following:
1. One (1) paper separation cyclone, which collects the scrap and conveys the paper to the baler, an air flow rate of 60,000 cfm and an overall efficiency of 99.9%; and
 2. One (1) baler.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

- (a) Registration, 083-9799-00040, issued on October 30, 1998

All conditions from previous approvals were incorporated into this permit.

Air Pollution Control Justification as an Integral Part of the Process

The company has submitted the following justifications such that the cyclone be considered as an integral part of the scrap collection system and the bin vent filter system be considered as an integral part of the pneumatic conveying of starch to the storage silo:

- (a) The cyclone collects paper scrap throughout various points in the building. The air flow of the cyclone aids in the circulation of the scrap and conveys the scrap to the baler. The scrap cannot be conveyed to the baler without the cyclone.
- (b) The bin vent filter system aids in reducing the amount of product lost when conveying the starch from the truck to the silo. Without this system, the amount of product lost would exceed 85% of the initial starch input.

The OAM has evaluated the justifications and agreed that the cyclone shall be considered as an integral part of the scrap collection system and the bin vent filter system shall be considered as an integral part of the pneumatic conveying of starch to the storage silo. Therefore, the permitting level will be determined using the potential emissions after the cyclone and bin vent filter system. Operating conditions will be specified in the proposed permit that this cyclone and bin vent filter system shall operate at all times when the scrap collection system and pneumatic conveying are in operation.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
001	boilers	35	2	2,850	650
002	general vent	--	--	--	--
003	silo	65	8	300	70
004	scrap collection	60	12	60,000	70

Recommendation

The staff recommends to the Commissioner that this operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the previous registration 083-9799-00040 submitted by the applicant and verified by OAM as available on file.

A request for the purpose of this review was received on October 24, 2000.

Emission Calculations

See Appendix A page 1 and 2 of this document for detailed emissions calculations related to Natural Gas Combustion.

Additionally, the calculations submitted by the applicant have been verified and found to be accurate and correct. These calculations are provided in Appendix B of this document.

Potential To Emit of Source Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	10.52
PM-10	11.4
SO ₂	0.1
VOC	4.89
CO	9.7
NO _x	11.6

HAP's	Potential To Emit (tons/year)
Glycol Ether	1.03
Methanol	0.001
Formaldehyde	0.004
TOTAL HAPs	1.035

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any criteria pollutant is equal to or less than 25 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5 and a Registration will be issued.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (c) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance

Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

County Attainment Status

The source is located in Knox County.

Pollutant	Status (attainment, maintenance attainment, or unclassifiable; severe, moderate, or marginal nonattainment)
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Knox County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Knox County has been classified as attainment or unclassifiable for all criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	10.52
PM10	11.4
SO ₂	0.1
VOC	4.89
CO	9.7
NO _x	11.6

- (a) This existing source is **not** a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source, is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
(c) any combination of HAPs is less than 25 tons/year.

This status is based on all the air approvals issued to the source. This status has been verified by the OAM inspector assigned to the source.

Federal Rule Applicability

- (a) 40 CFR Part 60 Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) is applicable to the two(2) natural gas fired boilers because the individual heat input capacity is greater than 10 mmBtu/hr, yet less than 100 mmBtu/hr and both were constructed after June 9, 1989. There are no emission limitations for PM, SO₂ and NO_x established under this rule for natural gas boilers.

Pursuant to 40 CFR 60 Subpart Dc, 60.48c, the following reporting and record keeping is required:

- (a) The owner/operator of each affected facility shall submit notification of the date of construction or reconstruction, postmarked no later than 30 days after such date, date of anticipated startup, postmarked not more than 60 days nor less than 30 days prior to such date, and date of actual startup, postmarked within 15 days after such date of actual startup.
- (b) This notification shall include:
- (a) The design heat input capacity of the affected facility and identification of fuels to be combusted;
 - (b) The annual capacity factor at which the owner/operator anticipates operating the affected facility based on the fuels fired;
 - (c) The owner/operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each month; and
 - (d) All records required under this section shall be maintained by the owner/operator of the affected facility for a period of two years following the date of such record.
- (b) 40 CFR Part 60 Subpart QQ (Standards of Performance for the Graphic Arts Industry) does not apply to the printing presses because they are flexographic presses and not rotogravure presses.
- (c) There are no other New Source Performance Standards (326 IAC 12) and 40 CFR Part 60 applicable to this facility.
- (d) This source is subject to the National Emission Standards for Hazardous Air Pollutants, 326 IAC 14, (40 CFR 60.820, Subpart KK). (copy of the federal rule has been enclosed with the permit)

The provisions of 40 CFR 63 Subpart A - General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63 Subpart KK.

The five flexograophic presses designated as #1, #2, #3, #4 and #5 are subject to the National Emission Standards for Hazardous Air Pollutants (NESHAPs), 326 IAC 14, (40 CFR 63, Subpart KK, and 326 IAC 20-1-1) as area sources as specified in 63.820 (a)(3). Pursuant to 40 CFR 63, Subpart KK, and 326 IAC 20-1-1, the operation of these presses are subject to the following conditions:

- (1) 40 CFR 63.829 (d) - The owner and operator of each facility which commits to the criteria of 63.820 (a)(2) shall maintain records of all required measurements and calculations needed to demonstrate compliance with these criteria, including the mass of all HAP containing materials used and the mass fraction of HAP present in each HAP containing material used, on a monthly basis.

- (2) 40 CFR 63.830 (b)(1) - An initial notification required in 40 CFR 63.9 (b).
- (d) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in Knox County and the potential to emit of any criteria pollutant is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 6-2 (Particulate Emissions Limitations for Sources of Indirect Heating):

The two (2) natural gas fired boilers rated at 13.2 mmBtu/hr each, are subject 326 IAC 6-2 (Particulate Emissions Limitations for Sources of Indirect Heating). Pursuant to 326 IAC 6-2-4, the particulate matter (PM) emissions shall be limited by the following equation:

$$Pt = 1.09/Q^{0.26} \quad \text{Where; } Pt = \text{Pounds of Particulate Matter emitted per million Btu (lb/mmBtu) heat input.}$$

$Q = \text{Total source maximum operating capacity rating in million Btu per hour (mmBtu/hr) heat input.}$

$$Pt = 1.09/13.2^{0.26} = 0.56 \text{ lb/mmBtu (one boiler @ 13.2 mmBtu/hr)}$$

$$\text{Allowable PM emissions} = (0.56 \text{ lb/MMBTU}) * (13.2 \text{ MMBTU/hr}) * (8760 \text{ hr/yr}) * (1 \text{ ton}/2000 \text{ lbs}) = 32.2 \text{ tons/year/boiler. Total allowable PM emissions} = 64.4 \text{ tons/yr.}$$

326 IAC 6-3 (Process Operations):

Pursuant to 326 IAC 6-3 (Process Operations):

- (a) The cyclone shall be in operation at all times when the scrap paper circulation system (including the baler) is in operation.
- (b) The filters used to prevent starch product loss, shall be in operation at all times when the silo is being loaded and unloaded.
- (c) The starch silo loading/unloading area and the scrap collection system shall comply with 326 IAC 6-3-2(c) using the following equation:
- $$E = 4.10P^{0.67} \quad \text{where: } E = \text{rate of emission in pounds per hour, } P = \text{process weight in tons per hour.}$$
- (i) Storage Silo Allowable PM emissions = $4.10 * (397 \text{ lb/hr} * \text{ton}/2000 \text{ lb})^{0.67} = 1.39 \text{ lb/hr}$; $1.39 \text{ lb/hr} * 8760 \text{ hr/yr} * \text{ton}/2000 \text{ lb} = 6.08 \text{ ton/yr}$; and
- (ii) Paper Scrap System Allowable PM emissions = $4.10 * (2400 \text{ lb/hr} * \text{ton}/2000$

$$\text{lb})^{0.67} = 4.63 \text{ lb/hr}; 4.63 \text{ lb/hr} * 8760 \text{ hr/yr} * \text{ton}/2000 \text{ lb} = 20.3 \text{ ton/yr.}$$

The above mentioned facilities are in compliance with 326 IAC 6-3 because the potential PM emissions are less than the allowable emissions.

- (d) An inspection shall be performed each calendar quarter of all the filters. Defective filters shall be replaced. A record shall be kept of the results of the inspection and the number of filters replaced.
- (e) In the event that a filter's failure has been observed:
 - (i) The affected compartments will be shut down immediately until the failed units have been replaced.
 - (ii) Based upon the findings of the inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion
- (f) That visible emission notations of all exhaust to the atmosphere from the cyclone and filters shall be performed once per working shift. A trained employee will record whether emissions are normal or abnormal.
- (g) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, 80% of the time, the process is in operation, not counting start up or shut down time.
- (h) In the case of batch or discontinuous operation, readings shall be taken during that part of the operation specified in the facility's specific condition prescribing visible emissions.
- (i) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal and abnormal visible emissions for that specific process.
- (j) The Preventive Maintenance Plan for this facility shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

326 IAC 8-1-6 does not apply to these facilities because the VOC emissions are less than 25 tons per year.

326 IAC 8-5-5 does not apply to the flexographic printers because the potential emissions of each press are less than 25 tons per year.

No other 326 IAC 8 rules apply to the facilities

Conclusion

The operation of this corrugated box manufacturing plant shall be subject to the conditions of the attached proposed Registration 083-12749-00040.

**Appendix A: Emission Calculations
Summary of PTE**

Company Name: Packaging Corporation of America
Address City IN Zip: 408 E. Clair Street, Vincennes, Indiana
CP#: 083-12749
Plt ID: 083-00040
Reviewer: GS
Date: 11-08-2000

Potential to Emit (Tons/Year)

Activity Type	PM	PM-10	SO2	VOC	CO	NOx	Glycol Ether	Methanol	Formaldehyde
Boilers	0.2	0.9	0.1	0.6	9.7	11.6	-	-	-
Cyclone	10.5	10.5	-	-	-	-	-	-	-
Starch Silo	0.22	-	-	-	-	-	-	-	-
Glue Application	-	-	-	0.51	-	-	-	-	-
Ink Application	-	-	-	3.45	-	-	0.75	-	-
Wax Application	-	-	-	0.33	-	-	0.28	0.001	0.004
Total	10.92	11.4	0.1	4.89	9.7	11.6	1.03	0.001	0.004

Appendix A: Emissions Calculations**Natural Gas Combustion Only****MM BTU/HR <100****Small Industrial Boilers****Company Name: Packaging Corporation of America****Address City IN Zip: 408 E. Clair Street, Vincennes, Indiana****CP: 083-12749****Plt ID: 083-00040****Reviewer: GS****Date: 11-08-2000**Heat Input Capacity
MMBtu/hrPotential Throughput
MMCF/yr

26.4

231.3

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	0.2	0.9	0.1	11.6	0.6	9.7

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

TABLE 3**MAXIMUM POTENTIAL AIR EMISSIONS FROM INK APPLICATION****TENNECO PACKAGING, INC.
VINCENNES, INDIANA**

MAXIMUM THEORETICAL INK USAGE =	150,000 LBS/YR			
MAXIMUM VOC CONTENT@	4.6%			
MAXIMUM GLYCOL ETHER CONTENT =	1.0%			
MAXIMUM VOC EMISSIONS =	0.79 LBS/HR	18.9 LBS/DAY	6,400 LBS/YR	3.45 TONS/YR
MAXIMUM GLYCOL ETHER EMISSIONS =	0.17 LBS/HR	4.1 LBS/DAY	1500.0 LBS/YR	0.75 TONS/YR

@ - REPRESENTS MAXIMUM VOC CONCENTRATION OF ANY INK CURRENTLY USED AT THE PLANT.

TABLE 4**MAXIMUM POTENTIAL AIR EMISSIONS FROM GLUE/ADHESIVE APPLICATION****TENNECO PACKAGING, INC.
VINCENNES, INDIANA**

MAXIMUM THEORETICAL GLUE USAGE =	160000 LBS/YR			
MAXIMUM VOC CONTENT @	0.0584 LBS/GAL			
WEIGHT PER GALLON =	9.2			
MAXIMUM VOC EMISSIONS =	0.12 LBS/HR	2.78 LBS/DAY	1,016 LBS/YR	0.51 TONS/YR

@ - REPRESENTS MAXIMUM VOC CONCENTRATION OF ANY GLUE/ADHESIVE CURRENTLY USED AT THE PLANT.
THE GLUE/ADHESIVES DO NOT CONTAIN FEDERALLY-REGULATED HAPs.

TABLE 5**MAXIMUM POTENTIAL AIR EMISSIONS FROM STARCH SILO****TENNECO PACKAGING, INC.
VINCENNES, INDIANA**

SILO EXHAUST AIR FLOW = 300 CFM

OUTLET PARTICULATE EMISSION CONCENTRATION = 0.02 GRAINS/CF

$$\text{PM EMISSIONS} = 300 \text{ ft}^3/\text{min} * 0.02 \text{ gr/ft}^3 * 60 \text{ min/hr} * 1\text{lb}/7000 \text{ gr} = 0.051 \text{ lbs/hr} * 24 \text{ hr/day} = 1.22 \text{ lbs/day}$$
$$\text{PM} = 0.051 \text{ lbs/hr} * 8760 \text{ hr/yr} * 1\text{ton}/2000 \text{ lbs} = 0.22 \text{ tons/yr}$$

TABLE 6**MAXIMUM POTENTIAL AIR EMISSIONS FROM PAPER SEPARATION
CYCLONE****TENNECO PACKAGING, INC.
VINCENNES, INDIANA**

0.1 PERCENT OF PAPER SCRAP (ASSUMED TO BE PM) IS ASSUMED TO BE EMITTED THROUGH SCREENS.
IN 1996 THE SYSTEM PROCESSED APPROXIMATELY 2400 TONS OF SCRAP.
BASED ON SYSTEM OPERATING PARAMETERS, THE SYSTEM CAN PROCESS 2400 LBS/HR OF PAPER SCRAP. THUS:

PM EMISSIONS = 2400 lbs/hr * 0.1% = 2.4 lbs/hr

2.4 lbs/hr * 24 hr/day = 57.6 lbs/day

2.4 lbs/hr * 8760 hr/yr * 1ton/2000 lbs = 10.5 tons/yr

TABLE 7

MAXIMUM POTENTIAL AIR EMISSIONS FROM WAX APPLICATION

TENNECO PACKAGING, INC.
VINCENNES, INDIANA

POUNDS PER GALLON =	8.7				
MAXIMUM THEORETICAL WAX USAGE =	20,000 GALS/YR	174,000 LBS/YR			
MAXIMUM VOC CONTENT =	0.33% BY WEIGHT				
MAXIMUM VOC EMISSIONS =	0.03 LBS/YR	1.31 LBS/DAY	661 LBS/YR	0.31 TONS/YR	
MAXIMUM FORMALDEHYDE EMISSIONS =	0.0004 LBS/YR	0.0191 LBS/DAY	6.96 LBS/YR	0.0036 TONS/YR	
MAXIMUM METHANOL EMISSIONS =	0.0002 LBS/YR	0.0045 LBS/DAY	1.74 LBS/YR	0.0009 TONS/YR	
MAXIMUM GLYCOL ETHER EMISSIONS =	0.0061 LBS/YR	1.5875 LBS/DAY	570.82 LBS/YR	0.2887 TONS/YR	